

Appl. No. 10/623,226
Reply to Office action of June 16, 2004

REMARKS/ARGUMENTS

Favorable consideration of this application is respectfully requested. No new matter, no new issues and no new considerations have been raised by this response. Applicants have amended the specification to remove any question of new matter, cancelled claims 21, 32, 33, 36 and 39 and amended claims 22, 30, 34 and 37 (the latter three claims to delete the objected term "transparent") to more clearly set forth Applicants' invention and to reduce any outstanding issues in the application. The present amendment is necessitated by the Final Office Action. Favorable reconsideration of this application is, consequently, earnestly solicited in view of the following remarks.

Applicants' response removes all objectionable areas cited by the examiner in the advisory action mailed October 4, 2004 and the objected to areas raised by the final rejection dated June 16, 2004. Applicant has made a good faith attempt with this response to clarify that the subject application is a divisional application.

1. Applicants acknowledge that an information disclosure statement must comply with 37 CFR 1.52 and that the references cited in US Patent 6,624,420 have been listed on an enclosed PTO-892.

2. Applicants acknowledge that the drawings received by the examiner on 5 April 2004 are acceptable.

3. Applicant has amended the term "multi-photon" back to the originally filed term "multi-phonon". Thus, there are no longer any more remaining issues of new matter.

4. The Examiner has objected to the form of the disclosure as a Divisional and suggests that the application should be a Continuation-In-Part. The Office Action states "the winning party of the interference is not denied anything he or she was in possession of prior to the interference, nor does he or she acquire any additional rights as a result of the interference ..." The Applicants respectfully contend that the application has been properly filed as a Divisional and that the parent application, now U.S. Patent No. 6,624,420, encompasses the subject matter of the amendments made to the present application. The amendments made to the specification do not raise new subject matter. The Applicants are not aware of any restriction in the MPEP that prohibits the filing and prosecution of this application as a divisional. This issue is further discussed below.

5. Claim 21 has been rejected under 35 U.S.C. 102(b) as being anticipated by Kurata et al. (US 5,690,731). This rejection is now moot since the claim has been canceled.

6. Applicant acknowledges the presumption that the subject matter of the various claims was commonly owned by the Applicants at the time the inventions covered therein were made.

7. Claims 22-29 were rejected under 35 U.S.C. 103(a) as being unpatentable over Kurata et al. (US 5,690,731) in view of Berkstresser et al. (US 5,164,041). Applicants respectfully disagree, as applicants have shown that Kurata et al. does not anticipate applicants' claimed composition, i.e. Kurata et al. does not disclose applicant's claimed composition, i.e. "...a composition for the detection of high energy radiation comprising: a cerium doped lutetium yttrium orthosilicate mono crystal wherein the crystal includes: a monocrystalline structure of cerium doped lutetium yttrium orthosilicate, $\text{Ce}_{2x}(\text{Lu}_{1-y}\text{Y}_y)_{2(1-x)}\text{SiO}_5$ where either $x =$ approximately 0.00001 to approximately 0.05 and $y =$ approximately 0.0001 to approximately 0.9999" or $x =$ approximately 0.0001 to approximately 0.001 and $y =$ approximately 0.3 to approximately 0.8; and alternatively a "... crystal scintillator comprising a transparent single crystal of cerium-activated lutetium yttrium oxyorthosilicate having the general formula Lu_{2-x} .

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7) $\text{Y}_x\text{Ce}_z\text{SiO}_5$, with $0.001 \leq z \leq 0.02$ and either $0.05 \leq x \leq 1.95$ or $0.2 \leq x \leq 1.8$." Berkstresser et al. does not supply what is missing from Kurata et al. Berkstresser et al. in combination with Kurata et al. does not provide applicants' claimed composition or any properties thereof. The composition must first be made so that the properties can be measured.

8. Claims 30, 31, and 34-39 were rejected under U.S.C. 103(a) as being unpatentable over Kurata et al. (US 5,690,731) in view of Berkstresser et al. (US 5,164,041) and Fitzpatrick (US 5,500,147). This rejection is now partially moot since claims 36 and 39 have been canceled. The Office Action states that "...it would have been obvious to one having ordinary skill in the art at the time of the invention that the photodetector in the detector of Kurata et al. is selected from the group of known scintillator photodetectors such as photomultiplier tubes, in order to detect light from the optically coupled crystal scintillator." Applicants respectfully disagree.

Applicants have shown that Kurata et al. does not anticipate applicants claimed composition, and Berkstresser et al. and Fitzpatrick do not supply what is missing from Kurata et al. to provide applicants' claimed composition, scintillator, or any properties thereof.

9. Claims 32 and 33 were rejected under U.S.C. 103(a) as being unpatentable over Kurata et al. (US 5,690,731) in view of Berkstresser et al. (US 5,164,041) and Fitzpatrick (US 5,500,147) as applied to claim 31 above, and further in view of Melcher et al. (J. of Crystal growth 128:1001-1005, 1993) and Loutts et al. (J. of Crystal Growth 174:331-336, 1997). This rejection is now moot since these claims have been canceled.

10. Applicants acknowledge that the terminal disclaimer, disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of U.S. Patent No. 6,624,420, has been reviewed and accepted.

11. The Office Action states that "...unless applicant is asserting that the instant claims are identical to previously allowed claims, MPEP § 2363.02 is not applicable." MPEP § 2363.02, Winning Party, provides that "If prosecution of the winning party's application had not been closed, the winning party generally may be allowed additional and broader claims to the common patentable subject matter." Further "The winning party of the interference is not denied anything he or she was in possession of prior to the interference, nor does he or she acquire any additional rights as a result of the interference." The Applicants respectfully contend that claims 30, 31, 34, 35, 37, 38, incorporated from Interference 105,083, are not new matter and that the claims have basis in the parent application. The previous examiner for the parent application determined, in Interference No. 105,083, that the molecular formula in the McClellan composition was the same as the molecular formula in the parent application and that the ranges in both the parent application and the McClellan patent are "anticipated or made obvious in view of each other under the principles set forth in MPEP §§ 2131.03 and 2144.05". Applicants respectfully contend that the specification of the parent application and now divisional application provide basis for the claimed subject matter of claims 30, 31, 34, 35, 37, 38. Applicants are not aware of any requirement in the MPEP that the claims must be identical. The Patent Office determined in the Interference that all claims of the McClellan patent were the same, or substantially the same, as claims of the original application and thus that applicants possessed the claimed subject matter prior to the interference.

MPEP § 706.04, Rejection of Previously Allowed Claims, states that "Full Faith and Credit should be given to the search and action of a previous examiner unless there is a clear error in the previous action or knowledge of other prior art. In general, an examiner should not take an entirely new approach or attempt to reorient the point of view of a previous examiner, or make a new search in the mere hope of finding something. *Amgen, inc. v. Hoechst Marion*

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Roussel, Inc., 126 F. Supp. 2d 69, 139, 57 USPQ2d 1449, 1499-50 (D. Mass. 2001). The Office Action has not provided any substantive arguments why claims 30 – 39 of the present application have been rejected when the claimed subject matter was determined, by a previous examiner, to have been supported and encompassed by the specification of the parent application. The Applicants respectfully contend that claims 30, 31, 34, 35, 37, 38, were previously allowable under the parent application and that they are entitled to the claimed subject matter of claims 30, 31, 34, 35, 37, 38, in this divisional application. Further, any of the potential issues of double patenting have been overcome by the terminal disclaimer filed by the Applicants.

The Applicants respectfully contend that the present invention provides new and unexpected results (i.e., improved scintillation properties) over Kurata et al. and Berkstresser et al. or any combination thereof. The Office Action states "...this argument is unpersuasive since applicant fails to provide evidence of unexpected results (i.e., improved scintillation properties) over the cited prior art". The Examiner's attention is respectfully directed to Table 1 (page 10, lines 1 – 14) wherein the experimental results for four intermediate LYSO charge compositions are compared to compositions of YSO and LSO. Light yield for two of the LYSO compositions is superior to the LSO composition. Light yield for all of the LYSO compositions is superior to the YSO composition.

In view of the foregoing considerations, it is respectfully urged that the above amendment be entered, and all rejections over claims 22-30, 31, 34, 35, 37, 38 be removed and the claims be allowed. If the Examiner believes that an additional interview would be helpful or a further affidavit by the Applicants, the Examiner is requested to contact the attorney at the below listed number. Alternatively, Applicants request that this amendment be entered in order to reduce issues for appeal. Again, applicant invites the examiner to contact the undersigned for an interview or a further affidavit by the Applicants if such would be helpful.

Respectfully Submitted;



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